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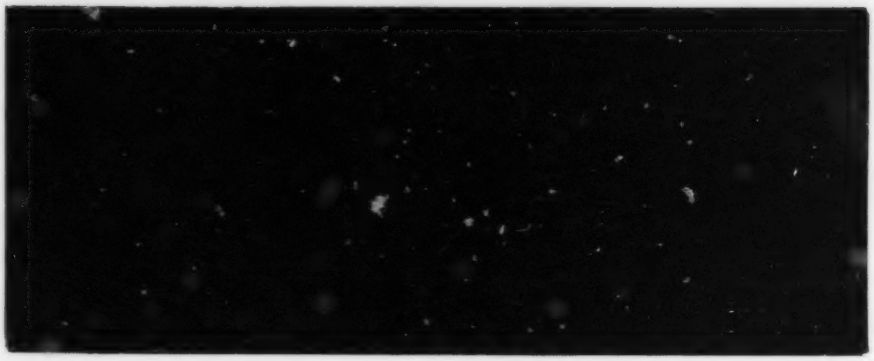

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Technical/Final Report
to
Saskatchewan Agriculture Development Fund

The Effect of One Injection of Killed B.V.D. Vaccine of Bovine Cell Origin on the Incidence of Respiratory Disease in Farm Feedlots in West Central Saskatchewan

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The Effect of One Injection of Killed B.V.D. Vaccine of Bovine Cell Origin on the Incidence of Respiratory Disease in Farm Feedlots in West Central Saskatchewan.

Introduction:

Shipping Fever is a costly disease on Sask. farms that rear their own calves and place them on feed in their own small feedlot even though they have not been mixed with strange cattle or handled through a stockyard facility.

Many of the cattle checked through slaughter houses indicate that they have had a previous exposure to the B.V.D. virus, but not a very high percentage of cattle show clinical signs of B.V.D. as we know it.

B.V.D. virus causes the white blood cell count to drop dramatically, thereby causing the animal to be more susceptible to bacterial infections of all sorts, including pneumonia.

Till recently, there hasn't been a safe, effective vaccine available to protect cattle from Bovine Virus Diarrhoea (B.V.D.).

The key question is: Would the vaccination of calves against B.V.D. using one injection of a vaccine with a killed virus of bovine cell origin at least 4 to 6 weeks before weaning cause a decrease in the cost of shipping fever in these cattle when they are fed in the farm feedlot at home so to speak in West Central Saskatchewan?

.....2

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If an injection such as this is to be of any value to these people, it has to do some good after one injection because many of the cattle are not moved from the pasture much more than one month before the anticipated weaning date. They have learned that if at all possible, late weaning is to be avoided.

Method:

The cattle herds selected for the test were above average as far as management was concerned. They were selected from different soil types and some had private pastures and some on community pastures. The calves of these herds are ear tagged at birth so as to identify them with their dams as a part of their normal management program.

The breeds of cattle represented in these tests were Charolais, Hereford and Shorthorn.

On each farm the calves were run through the chute and every other one was vaccinated by the Veterinarian. The numbers on the ear tags of the calves were recorded by the Veterinarian and the numbers of the calves which were vaccinated were marked by the Veterinarian. Only the Veterinarian knew which calves were vaccinated and which ones weren't. This record was put away and not looked at by anyone till after Dec. 31/85 when the test was complete.

.....3

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After vaccination, a book was left with each herd owner in which to record the calves that got sick with Respiratory disease -- Date, Calf #, Temp., Signs, Treatments and Results.

After Dec. 31/85 these books were collected and the data compared to check the results of vaccination versus non-vaccination.

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Results:

Herd #	Total Calves	Calves Vaccinated With B.V.D.	Calves Not Vaccinated With B.V.D.
1	49	24	25
2	79	40	39
3	73	38	35
4	53	27	26
5	125	62	63
6	125	63	62
7	30	15	15
Total	534	269	265

Herd #	Sick Calves	Sick Calves Vaccinated With B.V.D.	Sick Calves Not Vaccinated With B.V.D.
1	0	0	0
2	20	9	11
3	6	3	3
4	3	1	2
5	6	4	2
6	6	3	3
7	0	0	0
Total	41	20	21

Total sick calves = 7.68% overall.

.....5

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As can be seen from the data above, there was no significant change in the incidence of respiratory disease in the calves as a result of vaccinating them once with Killed B.V.D. Vaccine of Bovine Cell origin before weaning.

Last fall being a late harvest in this region, we had difficulty in holding the calves 4 to 6 weeks before weaning, after vaccination. One herd, herd #5, weaned 1 week after injection and one, herd #7, 2 weeks after injection.

They had a total of 6 calves sick out of 155 or approximately 4%.

The other herds were weaned 3 to 5 weeks after vaccinating. They had a total of 35 sick out of 379 or 9.23%. Thus it would seem that lengthening the time to weaning did not increase the effectiveness of the vaccine.

One herd in the 3 to 5 week category, herd #2, had 19 sick out of 79 and was weaned 4 weeks after vaccinating. Taking this herd out of the data, there were 15 sick calves out of 300 total = 5% sick calves which approximates the % of calves found in the early weaned group.

.....6

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A comparison between breeds likely is not valid because of the small numbers of herds, however:

Hereford - taking all 4 herds, 29 sick out of 306 = 9.48%
- leaving out the herd with 20 sick out of 79 we get 9 sick out of 227 = 3.96%.

Charolais - 2 herds, 6 sick out of 103 = 5.83%

Shorthorn - 1 herd, 6 sick out of 125 = 4.8%

As some of the herds got IBR PI_3 intranasal vaccine at the time of B.V.D. vaccination, or at least 3 weeks before weaning, the groups were compared on this basis to see if there was any difference between their groups.

.....7

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Comparison of Calves Vaccinated With IBR PI_3 Intranasal Vaccine at Least 3 Weeks before Weaning With Those Not Receiving the IBR PI_3 Vaccine.

	No IBR PI_3 Before Weaning			Got IBR PI_3 Before Weaning		
Herd #	Total	Sick	OK	Total	Sick	OK
1	49	0	49			
2				79	20	59
3				73	6	67
4	53	3	50			
5	125	6	119			
6	125	6	119			
7				30	0	30
TOTAL	352	15	337	182	26	156

If one was to pull herd #2 from the data it would appear that there was no significant difference in Respiratory disease between the IBR PI_3 vaccinated herds and those which were not vaccinated.

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Discussion:

As mentioned earlier, the late harvest season made it difficult to hold calves for the anticipated 4-6 weeks post-vaccination. However, this was accomplished in most herds and comparisons made. It seemed the time to weaning after vaccination wasn't all that significant.

The one herd had a much larger percentage of sick calves than the average of the rest. In spite of this, it seems there was no significant difference between the B.V.D. vaccinated calves and those that were not. This herd was in three separate private pastures and brought together at weaning time. As to whether or not this was the extra stress or not can only be speculated.

In the original proposal it was stated that 500 calves would be a minimum for such a field trial and up to 1000 would be worth seeking. We were held to 534 calves which, as evident from the results, was likely the minimum we should have used.

Though our original project goal was to establish the effectiveness of one injection of Killed Bovine Cell Origin B.V.D. Vaccine and indeed that was our whole trial, when we collected the herd data we found we had a chance to compare the herds vaccinated with IBR PI_3 intranasally with those not vaccinated with the IBR PI_3 vaccine. Thus the reason for the comparison.

.....9

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Because herd #2 had a significantly higher percentage of sick animals than all of the others, we hate to leave these numbers in to compare the IBR PI_3 vaccine, as including this herd makes the IBR PI_3 vaccine look bad. I'm sure that the vaccine did not increase illness numbers because other vaccinated herds showed no ill effects. However, it looks as though it may not have reduced the incidence of Respiratory Disease Complex either.

Respectfully submitted,

Fred J. Weeks, D.V.M.

FJW/amp